



STATE OF MONTANA
DEPARTMENT OF ADMINISTRATION
INFORMATION TECHNOLOGY SERVICES DIVISION



Brian Schweitzer
Governor



Montana State Library

Agency Biennial Report

FOR FY2010

STATE OF MONTANA

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INFORMATION TECHNOLOGY SERVICES DIVISION

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EXECUTIVE SUMMARY

Introduction

The mission of the Montana State Library (MSL) is to meet the information needs of Montana state government management and staff, to ensure that all Montana citizens have access to information created by their government, and about their natural environment, to support the role of all Montana libraries to deliver quality library content and services to their patrons, and to ensure that Montanans who are blind and physically handicapped are provided access to library resources.

Information technology is integrated into nearly every function of the State Library, from the storage of digital content to the delivery of library services in various forms. The programs of the library rely heavily on the state network, on MSL's servers and storage area network (SAN) and on Internet technologies to support their business goals.

Meeting Current Business Challenges

IT resources at MSL have been very focused over the last couple of years on upgrading legacy systems both in terms of hardware upgrades as well as electronic resources development and enhancement. This investment is in response to the business concerns faced by MSL programs:

- The Montana Shared Catalog (MSC) membership surpassed 100 libraries and it continues to grow. At the same time its hardware and software components reached the end of their natural lifespan so these core components are now being replaced. Ensuring the longevity of this system is critical because it now serves more than 338,000 Montana patrons.
- The Montana Natural Resource Information System (NRIS) augmented the GIS Clearinghouse with the Montana GIS Portal, an online catalog of GIS metadata. Emphasis is now on replacing the Montana Digital Atlas and Topofinder applications with a solution based on ESRI's ArcGIS Server platform. This project increases information sharing opportunities among GIS data producers and consumers as part of the state's overall strategy for building a federated GIS enterprise.
- The Library Information Services (LIS) program continues to digitize its entire print state publications legacy collection (55,000 volumes) requiring additional terabytes of storage. The result of digitizing this collection is that Montana's state government publications are being used at rates more than 40 times higher than use of their print equivalent.
- The Talking Book Library (TBL) is gradually converting its collection from analog to digital media to meet user demands and to remain consistent with its national counterparts. This requires new software, hardware and storage solutions that can accommodate new playback devices, new media and new file formats.
- The Statewide Library Resources (SLR) Division continually seeks ways to reduce costs and add value to the resources, training and consulting services it provides to libraries

throughout the state. SLR facilitates access to online content for Montana libraries through statewide subscriptions for online databases and e-content. The division is now investing in the use of online collaboration tools and Web 2.0. Additionally, SLR upgraded training labs during FY09. This includes both an in-house lab and a traveling laptop lab.

- Much of MSL's internal operational systems including our management server, File and Print Server, web servers, database servers and SAN also reached the end of their reliable life-cycle during this period. At the same time the State built the State of Montana Data Center (SMDC). However, timing and cost prevented MSL from utilizing these resources. That said, we believe that there is considerable benefit from shared enterprise resources and will continue to evaluate both the SMDC as well as other resources including cloud computing in the future.

Because MSL is a small agency, our information technology projects generally do not meet the definition of Strategic IT Initiatives as defined by the IT Plan. Nonetheless, each is critical to our patrons and partners and thus deserves the highest degree of professionalism in planning, implementation, ongoing administration and care.

INITIATIVE STATUS	TOTAL COUNT	FULLY FUNDED COUNT	UNFUNDED COUNT	PARTLY FUNDED COUNT
COMPLETED	1	1	0	0
SUBSTANTIALLY COMPLETED	1	1	0	0
DEFERRED	0	0	0	0
DELAYED	0	0	0	0
CANCELLED	0	0	0	0
REMAIN ON-GOING BY DESIGN	1	0	0	1

SECTION 1: AGENCY IT PLAN ACCOMPLISHMENTS – GOALS & OBJECTIVES

1.1 Goals

MSL IT Goal 1: Maintain Technology Resources in an Organized, Deliberate and Cost Effective Manner

ITG 1 Maintain Existing Technology Resources in an Organized, Deliberate and Cost Effective Manner

Description: Montana State Library uses information technology to support our Agency Business Plan. MSL evaluates new technologies based on their potential to help MSL better serve the information needs of its patrons and partners. MSL implements information technology in an organized, deliberate and cost-effective manner.

Benefits: Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. MSL partners and patrons benefit by having reliable access to high quality content and services. MSL staff benefit by having the resources they need carry out their work.

Supports/Implements State IT Goals: 1, 2, 3, 4 and 5

ITO 1-1 Maintain the MSL information technology plan.

Accomplishments: MSL completed and submitted our MSL information technology plan in 2008. This plan was approved by the CIO and is available online at: <http://itsd.mt.gov/stratplan/default.mcpix>. In 2009 MSL also submitted our IT Plan addendum. And in the spring of 2010 the FY2010 IT Plan was submitted and accepted. Additionally, MSL keeps our IT inventory substantially up-to-date. By maintaining our IT plan Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. MSL partners and patrons benefit by having reliable access to high quality content and services. MSL staff benefit by having the resources they need carry out their work.

Status: On-going

Supporting Objective/Action

ITO 1-2 Participate in IT governance

Accomplishments: MSL staff regularly attends meetings of the IT Board, the IT Managers Council, the eGovernment Advisory Committee, the ESRI ELA Management Committee and the GIS Managers Forum as well as other council meetings as time allows. By participating in State IT governance MSL benefits from improved IT management through best practices, peer networking, and collaborative solutions to problems as well as cost effective IT resource allocation

through collaborative purchasing.

Status: On-going

Supporting Objective/Action

ITO 1-3 Comply with all relevant Enterprise IT standards and policies.

Accomplishments: MSL reviews all new IT standards and policies issued by ITSD. We take steps to understand and implement policies as necessary. For example, based on the draft social media standard, MSL implemented our own social media policies. MSL communicates regularly with our customer service representative to ask questions and learn more about how we can effectively use and/or implement state standards and policies. Montana taxpayers benefit from this compliance through tax savings associated with appropriate use of IT in government. Government employees, library patrons, citizens and businesses benefit by having reliable access to high quality content and services. MSL employees benefit by having an IT infrastructure that is secure and reliable in order to carry out their work.

Status: On-going

Supporting Objective/Action

ITG 1-4 Provide for Continuity of Services of the MSL Data Center systems and applications by taking the following actions:

- Maintain current documentation on all systems and applications
- Develop and implement an agency Disaster Recovery Plan
- Comply with all relevant Security Policies
- Implement a change management program
- Maintain and review back-up routines monthly
- Maintain and test fail-over systems on a routine basis
- Maintain and test the back-up generator on a routine basis

Accomplishments:

- MSL is improving documentation for our systems. Much of this documentation is maintained through an internal blog used by IT staff as well as through an asset database and through the use of Subversion as our code library.
- MSL staff drafted an agency-wide disaster recovery plan using the online tool for libraries, dPlan. A disaster recovery team is scheduled to review the plan beginning in September. On-going plans for this team include hands-on training and joint disaster preparedness exercises with the Montana Historical Society.
- MSL staff participate on the Information Security Managers Group which is currently reviewing and updating State security policies to meet NIST standards.

- MSL has data backup routines in place which are reviewed and updated on a regular basis. MSL maintains shadow copies of all files on our File and Print server. We also use imaging software to take images of our servers and workstations. Critical data is also backed-up to tape and stored offsite with Montana Records Management.
- MSL's back-up generator receives monthly maintenance and testing from MTI.
- Additionally MSL installed new Tripp-lite monitoring equipment in our Data Center so we will receive more timely information in the event of environmental changes in the Data Center.
- Finally MSL staff attended training from the State Continuity Services staff on the Living Disaster Recovery Planning System being implemented by the State.

MSL users and partners benefit from our efforts to provide for continuity of service for a stable and secure IT environment. This effort results in decreased system downtime for many of our critical applications including the Montana Shared Catalog.

Status: On-going

Supporting Objective/Action

ITO 1-5 Proactive management of hardware and software assets

- Maintain inventories of hardware and software.
- Replace hardware on a four-year cycle and software as needed.
- Ensure that all hardware and software assets are protected by maintenance plans and warranties.

Accomplishments:

- SAN: The original warranty for the MLS SAN was extended for 18 months until October 2010. After reviewing the cost for comparable storage through the SMDC MSL chose to purchase a replacement SAN with FY2010 year-end funds. This SAN is currently installed and is being tested prior to data transfer.
- Training labs: MSL replaced portable laptop lab and Grizzly Conference Room lab computers in 2009.
- 10 Blade Servers: The original warranty for the MSL blade servers was renewed for 18 months until October 2010. Over the course of FY09 and FY10 replacement servers have been purchased. Additionally, MSL plans to utilize a virtual server at the SMDC as a redundant, fail-over server for our primary web server which will move off of a blade server and onto a locally hosted virtual server in the next month.
- MSLHLNCNTDM01 Server: See SAN.
- MSLHLMSCDS Server: This server, which supports a statistical analysis

application for the Montana Shared Catalog will be replaced in FY2011 following an upgrade to the application software by the vendor.

- MSLHLNMANGE1 (NOD32 Mirror Server) and MSLHLNIMG001 (Symantec Backup Exec Server): Rather than purchasing a new management server MSL chose to take advantage of a virtual server available through the host server purchased to replace some of our blade servers.
- Desktop computers: MSL purchased new desktops to replace desktops that went out of warranty in 2009 and 2010. All new desktops include a five-year warranty.
- Adic Tape Library: Warranty renewed through FY 2011.

Status: On-going.

Supporting Objective

ITO 1-6 Maintain an effective desktop computing environment, including but not limited to:

- File and Print Services
- Backup services
- Network and user accounts
- Standard desktop software support
- Specialized desktop software support
- Hardware troubleshooting and support

Accomplishments: MSL purchased a new File and Print server in FY2009. We are also taking a more granular approach to back-up services to make our data back-ups more reliable and cost effective. MSL has effectively implemented the State delegated authority policy for purchase of hardware and software to support the desktop environment. Enforcement of this policy helps us to better track assets while at the same time maintaining compliance with State policies and standards.

Status: On-going

Goal Number 2: Help MSL programs meet business challenges through the appropriate deployment of information technology solutions.

ITG 2 Help MSL programs solve business problems through the appropriate deployment of new information technology solutions.

Description: Assist MSL's business divisions and programs in their efforts to improve library content and services through the appropriate deployment of technology solutions.

Benefits: Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. MSL partners and patrons benefit by having reliable access to high quality content and services. MSL staff benefit by having the resources they need carry

out their work.

Supports/Implements State IT Goals 1, 2, 3, 4, 5

Supporting Objective/Action

ITO 2-1 Consult with Department of Administration when evaluating new information technology solutions to support the Montana State Library Business Plan

Accomplishments: MSL successfully works with the Department of Administration through the procurement and delegated authority policies. MSL seeks their recommendation for software and hardware standards and works hard to communicate our information technology needs with them. Montana taxpayers benefit through tax savings as a result of this collaboration which results in the appropriate use of IT in government. MSL partners and patrons benefit by having access to high quality content and services. MSL staff benefit by having the resources they need carry out their work.

Status: On-going

Supporting Objective/Action

ITO 2-2 Provide for digital storage to accommodate expected growth in MSL's digital collections.

Accomplishments: MSL purchased a new SAN at the end of F2010 to provide local storage for our digital collections including digital state publications, digital recorded books, digital photos and data. MSL licensed the OCLC Digital Archive to provide long-term access for digital masters of digital collections owned by libraries, archives and museums around Montana. Finally, MSL is encouraging our digitization partner, the Internet Archive, to become certified as OAIS (Open Archives Information System) compliant. While MSL is comfortable that the Internet Archive meets OAIS standards this certification would lend credibility to that statement and would allow MSL to use the Internet Archive not only as our access tool but also as our preservation resource. MSL partners and patrons benefit by this storage effort by having reliable, long-term access to high quality content and services.

Status: On-going

Supporting Objective/Action

ITO 2-3 Replace legacy systems as needed to keep up with maintenance requirements, state standards, industry standards and patron demand.

Accomplishments: See ITO 1-5. Additionally, in FY2009 MSL launched the Montana GIS Portal which is quickly becoming the cornerstone of the NRIS GIS Clearinghouse and the discovery hub of the Montana GIS Federation. Emphasis is now on creating a new generation of the popular NRIS Topofinders and Digital Atlas applications which are being built in the new ESRI ArcGIS Server software.

MSL is also partnering with ITSD and the Montana Department of Natural Resources and Conservation (DNRC) to update the Water Rights Query System also using ArcGIS software. This creates greater continuity between applications. Finally, the Talking Book Library began their digital conversion in earnest. Patrons can now check out digital players rather than traditional analog cassette players and TBL is vastly increasing the amount of digital content in their collection. Because of these migration efforts MSL partners and patrons benefit by having access to high quality content and services.

Status: On-going.

Goal Number 3: Expand and Improve Online Information Services

ITG 3 Expand and Improve Online Information Services

Description: Montana State Library strives to provide high-quality information services that can be accessed anytime, anywhere via the worldwide web.

Benefits: Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web.

Supports/Implements State IT Goals: 1, 3 and 5

Supporting Objective/Action

ITO 3-1 Improve the overall design and usability of MSL websites and services.

Accomplishments: See ITO 2-3. MSL is now engaged in a rewrite of our primary website. This rewrite will use HTML5 in order to respond to users' demands for mobile access to library resources. This work ensures that government employees, library patrons, citizens and businesses benefit by having reliable access to high quality content and services via the web.

Status: On-going

Supporting Objective/Action

ITO 3-2 Collaborate with partners on projects which increase citizen access to public information.

Accomplishments:

- The Montana GIS Portal was launched in FY2009 and was upgraded in FY2010 (<http://gisportal.mt.gov>). NRIS collaborates with publishers from state and local governments to populate the GIS Portal with metadata for Montana GIS data.
- MSL is now in our third year of an on-going project with the Internet Archive to digitize our legacy print state publications collection (55,000 volumes). To date, more than 12,000 publications or 20% of our

collection, totaling nearly 1 million pages are digitized and available online at: <http://www.archive.org/details/MontanaStateLibrary>. Of note, in the spring of 2010, MSL partnered with the Montana Fish, Wildlife and Parks (FWP) to digitize the complete run of FWP's magazine Montana Outdoors.

- MSL continues to maintain statewide subscriptions to periodical databases for use by libraries across the state. MSL is also encouraging growth in a consortium for downloadable audio files and online E-books managed by MSL through the vendor Overdrive.
- In January 2010 MSL launched the Montana Place Names Companion (<http://mtplacenames.org>). This application, built in collaboration with the Montana Historical Society makes web accessible the content of the recently published Montana Place Names book and includes a mapping interface also based on ArcGIS server software.
- In collaboration with FWP, in August 2010 MSL launched the Hunting Companion (<http://msl.mt.gov/hunting>). This, first of its kind companion, is designed to bring together natural resource information about hunting to meet the information needs of Montanans and Montana librarians in an easy-to-use one-stop location. Future companions are planned on such topics as fishing, birding, farming and ranching, mining, and water resources.

This work ensures that government employees, library patrons, citizens and businesses benefit by having reliable access to high quality content and services via the web.

Status: On-going

Supporting Objective/Action

ITO 3-3 Provide online interfaces that enable partners to contribute content to MSL collections.

Accomplishments: See ITO 2-3. Additionally, in partnership with the Montana Historical Society MSL is actively growing the Montana Memory Project, an online resource for libraries, archives and museums to provide online access to their digital collections (<http://mtmemory.org>). Within the last two years 25 new collections have been added to the Montana Memory Project.

Status: Complete and on-going.

Goal Number 4: Improve MSL's ability to attract and retain a qualified IT workforce.

ITG 4 Improve MSL's ability to attract and retain a qualified IT workforce.

Description: The agency will take steps to improve recruitment and retention of IT personnel.

Benefits:

- Opportunities for career growth, learning, and development are

- maximized.
- Employees are recognized, valued, and respected for the contributions they make and are compensated fairly for their work.
- Lower employee turnover and decreased loss of organizational knowledge
- Critical business areas are provided with cross-trained support.

Supports/Implements State IT Goals : 1, 2 5

Supporting Objective/Action

ITO 4-1 Use IT staff in ways that support the Agency Business Plan and promote opportunities for collaboration and cross-training.

Accomplishments: MSL has a very small number of IT staff given the significant nature of IT resources we use and create. This necessitates that staff work collaboratively. To that end, we put an emphasis on communication through regular staff meetings and on documentation and cross-training. The outcome of this collaboration is evident in the number of new applications released and currently being developed by MSL.

Status: On-going

Supporting Objective/Action

ITO 4-2 Develop the IT workforce through investment in training and professional development. Implement training plans and career ladders for employees that align with MSL's projected needs for IT.

Accomplishments: MSL IT staff regularly take advantage of a variety of training and professional development opportunities. For example staff attend the Code for Lib conference, a conference that encourages sharing of open source code for library programmers, and the Best Practices Exchange, a national group that focuses on preservation and access to digital government information. NRIS staff also regularly attends ESRI training available through the Montana ESRI enterprise license agreement.

Status: On-going

Supporting Objective/Action

ITO 4-3 Implement an on-call policy that rotates on-call duty among central IT group employees. The policy shall include compensation for on-call coverage and provide for routine training for on-call participants.

Accomplishments: In December 2008 the MSL Commission approved an on-call policy that provides weekend support for MSL online resources. Compensatory time is earned by staff that serves on-call. On-call support is voluntary and staff is encouraged to volunteer for one or two weekends per quarter.

Status: Completed and ongoing

SECTION 2: IT INITIATIVES STATUS UPDATE

2.1 IT Initiatives (*Taken from 2008 plan and 2009 update*)

Initiative 1 - Title: Montana GIS Portal

Description: \$150,000 general fund per year in 2008-2011. This project will increase information sharing opportunities among GIS data producers and consumers as part of the state's overall strategy for building a federated GIS enterprise. This initiative will combine the use of the ERSI GIS Portal solution based on ArcGIS Server platform with a new Digital Atlas meant to replace the existing MSL Digital Atlas, Data Bundler and Topofinder applications.

EPP Number (if applicable): N.A.

Status (completed, substantially completed, deferred, delayed, cancelled, or on-going): The Montana GIS Portal initiative is substantially completed. The Portal was released in September 2008. This release used ESRI Portal Toolkit 3.1 software. On October 1, 2009, MSL released a significant upgrade to the GIS Portal using ESRI Portal Toolkit 9.3. The new Digital Atlas, which will eventually replace the current Digital Atlas, Data Bundler and Topofinder applications, is currently in development and substantial components of the application are complete. Initial testing is planned for the fall of 2010 with the launch of the new Digital Atlas planned for late 2010 or early 2011. The Montana GIS Portal is available online at: <http://gisportal.mt.gov>.

Funding (funded, not funded, or partially funded): Funded.

Initiative 2 - Title: State Publications Digitization

Description: \$66,000 dollars has been encumbered for FY08 and FY09 to digitize as much of the state publication collection as possible. Adding these digital files to the library catalog will increase access to state publication information and protect the print copies from further damage or loss. The Montana State Librarian is considering going forward with an EPP request for \$600,000 to digitize the complete legacy print collection of approximately 55,000 items.

EPP Number (if applicable): N.A.

Status (completed, substantially completed, deferred, delayed, cancelled, or on-going): The State Publications Digitization initiative is on-going. From FY08-FY10 MSL has spent approximately \$100,000 on this effort from our base budget. Working under contract with the Internet Archive, MSL has digitized 12,734 publications totaling more than 927,000 pages. Based on our project estimates we are nearly 20% complete with

this ongoing project. These publications are freely available online at <http://www.archive.org/details/MontanaStateLibrary>.

Funding (funded, not funded, or partially funded): On-going funding from MSL base budget as funding allows. MSL will spend \$45,000 from our FY11 budget to continue this effort.

Initiative 3 - Title: Training Lab Replacement

Description: MSL maintains computer labs for meeting and training purposes. In addition to an in-house lab, MSL has a traveling laptop lab used by MSL for conferences, meeting and training purposes around the state. This hardware is heavily used and will need replacing in FY09 or FY10. The Montana State Librarian is considering going forward with an EPP request for \$75,000 to replace these two training labs.

EPP Number (if applicable): N.A.

Status (completed, substantially completed, deferred, delayed, cancelled, or on-going): The Training Lab Replacement initiative is completed. MSL replaced both our desktop lab and our traveling laptop lab with FY09 year-end funds.

Funding (funded, not funded, or partially funded): Funded.

SECTION 3: ADDITIONAL INFORMATION - OPTIONAL

Over the next two years, MSL will undertake a review and update of our strategic plan: [Montana State Library Strategic Plan 2006-2011](#); as the goals and objectives of the agency changes, so too will our IT objectives. Those changes will be reflected in future updates to the MSL IT Plan.